

**Table. Corn Oil Design Type 1 Studies: Postintervention Blood Lipid Concentrations (Final Value, % Change or Mean Change)\***

Author/ Year	Quali- ty (+,-,Ø)	Population Sample Size Length of Study	Regimen	Postintervention Blood Lipid Concentrations Final Value, % Change or Mean Change			
				TC	LDL-C	HDL-C	TC/HDL OR LDL/HDL
<b>HEALTHY SUBJECTS</b>							
Wagner et al., 2001	+	28 healthy Australian males (19-31 y of age)  2-wk RCT, DB, CO	Corn oil 80 g corn oil/d Total fat: 30-35% TE; 80% from corn oil PUFAs: 39% total fat	4.5 ± 0.7 mmol/L vs high MUFA diet (P<0.01)	3.06±0.88 mmol/L (P<0.01))	NSD	Not reported
Schwab et al., 2000	Ø	13 subj (7 postmenopausal females, 6 males)  32-d RCT, CO	Corn oil Total fat: 30% TE ; 2/3 fat from corn oil PUFAs: 11.2 ± 0.5% TE	5.01±0.53 mmol/L vs corn oil + chol (P<0.05)	3.24±0.54 mmol/L (P<0.05)	1.14±0.25 mmol/L (P<0.05)	NSD (TC/HDL)
Howell et al., 1998	+	16 normolipidemic subj (8 females, 8 males)  10-d RCT, CO	Corn oil Total fat: 35% TE; 2/3 fat from corn oil PUFAs: 17% of TE Phytosterols: 218.9 mg/1000 kcal	3.32±0.11 mmol/L vs olive oil (P<0.001)	1.99±0.12 mmol/L (P<0.05)	NSD	Not reported
Schwab et al., 1998	Ø	14 moderately hypercholesterolemic middle-aged or elderly subj (8 females, 6 males)  32-d RCT, CO	Corn oil Total fat: 30% TE; 2/3 fat from corn oil PUFAs: 11.21 + 0.52% TE	5.00±0.51 mmol/L vs beef tallow (P<0.05)	3.24±0.49 mmol/L (P<0.05)	NSD	4.60 + 1 (P<0.05) (TC/HDL )

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Insull et al., 1994	+	61 healthy adults (35 females, 26 males)  5-wk TX periods; RCT, DB, CO	Corn oil amt not provided; dominant oil Total fat: 22.3-25.7% TE PUFAs: 16.0 g (9.3% TE)	3.93 ± 0.66 mmol/L  -10.8% (P<0.0001) % change vs ad lib diet	2.22 ± 0.58 mmol/L  -12.0% (P<0.0001)	1.30 ± 0.28 mmol/L  -11.0% (P<0.0001)	Not reported
Jones et al., 1994	+	15 healthy subj  32-d RCT, DB, CO	Corn oil Total fat: 30% TE; 2/3 from corn oil PUFAs: Not reported P/S ratio 1.625	194±5 mg/dL (P<0.005) vs baseline	125±5 mg/dL (P<0.001)	44±2 mg/dL (P<0.01)	Not reported
Lichten- stein et al., 1994(a)	+	15 middle-aged and elderly subj (8 females, 7 males)  32-d RCT, DB, CO	Corn oil Total fat: 30% TE; 2/3 from corn oil PUFAs: 11.21% ± 0.52S	194±19 mg/dL (P=0.001) vs olive oil	125±19 mg/dL (P=0.01)	NSD	NSD
Lichten- stein et al., 1994(b)	+	14 middle-aged and elderly women and men  32-d RCT, DB, CO	Corn oil diet: Total fat: 29% TE; 2/3 from corn oil PUFAs: 11.21% ± 0.52	194±20 mg/dL (P<0.05) vs baseline  218±19 mg/dL (P<0.05) beef tallow vs baseline  (P<0.05) vs beef tallow	124±20 mg/dL (P<0.05)  140±27 mg/dL (P<0.05)  (P<0.05)	44±9 mg/dL (P<0.05)  45±9 mg/dL (P<0.05)  NSD	4.59±1.04 (TC/HDL-C) NSD  5.10±1.34 NSD  (P<0.05)

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Lichten- stein et al., 1993(a)	+	14 middle-aged or elderly moderately hypercholesterolemic subj (8 females, 6 males)  32-d RCT, DB, CO with 1- to 2-wk washout	Corn oil  Total fat: 30% TE; 2/3 from corn oil 20% TE  PUFAs: $9.45 \pm 2.55$ % TE  <i>Trans</i> fat: $12.4 \pm 2.8$ g/person/d ave during margarine phase	- $13 \pm 6$ % ( $P=0.001$ ) vs baseline  $-7 \pm 10$ % ( $P=0.006$ ) Corn oil margarine vs baseline  $P=0.039$ vs corn oil margarine	- $17 \pm 8$ % ( $P=0.001$ )  $-10 \pm 12$ % ( $P=0.003$ )	- $9 \pm 7$ % ( $P=0.002$ )  $-11 \pm 9$ % ( $P=0.002$ )  NSD	$4.58 \pm 1.04$ (TC/HDL-C) ( $P=0.121$ )  $5.54 \pm 1.94$ ( $P=0.037$ ) % change not reported  $P=0.037$
Lichten- stein et al., 1993(b)	+	15 middle-aged or elderly subj (14 completed: 8 females, 6 males)  32-d RCT, DB, CO with 1- to 2-wk washout	Corn oil  Total fat: 30% TE; 2/3 from corn oil or 20% TE  PUFAs: $11.21\% \pm 0.52$	$194 \pm 19$ mg/dL  $-13 \pm 6$ % ( $P=0.001$ ) vs baseline	$125 \pm 19$ mg/dL  $-17 \pm 8$ % ( $P=0.001$ )	$44 \pm 9$ mg/dL  $-9 \pm 7$ % ( $P=0.01$ )  NSD	$4.60 \pm 1.00$
Ng et al., 1991	+	83 healthy subj (80 completed: 22 females, 58 males)  5 wk each period RCT, DB	Corn oil:  75% of total dietary fat, 24% TE  Total fat: 32% TE (ave)  PUFAs: 35.6% of fat; 11.4% TE	$3.15 \pm 0.60$ mmol/L ( $P=0.001$ ) vs coconut oil and baseline  $-36$ % ( $P=0.001$ ) vs coconut oil	$1.78 \pm 0.49$ mmol/L ( $P=0.001$ )  $-42$ % ( $P<0.001$ )	$0.99 \pm 0.21$ mmol/L ( $P=0.001$ )  $-26$ % ( $P<0.001$ )  Not reported	$1.81 \pm 0.60$ ( $P=0.001$ ) (LDL-C/HDL-C)

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Wardlaw and Snook, 1990	+	22 men (20 completed CO phases; 17 completed final phase)  5-wk RCT, CO	STUDY 1: Corn oil: 85% of fat; 34% TE Total fat: 40% TE PUFAs: 19.1%  STUDY 2: Corn oil-based diet continued (chol 500 mg/d)	4.95 $\pm$ 0.16 mmol/L ( $P$ <0.001)  -14 % ( $P$ <0.01) vs baseline  -21 ( $P$ <0.001) vs butter  NSD vs corn oil + chol	3.41 $\pm$ 0.13 mmol/L ( $P$ <0.001)  -13% ( $P$ <0.05)	1.09 $\pm$ 0.05 mmol/L NSD  % not reported  NSD	Not reported
Kohlmeier et al., 1988	+	15 nonobese, healthy men  4-wk RCT, CO	Corn oil: 35 g corn oil, 40 g corn-oil margarine, 35 g hidden fat Total fat: 117 g PUFAs: 36.3 g	-25.0 % ( $P$ $\leq$ 0.001) % median relative diff vs normal diet  -6.8% ( $P$ $\leq$ 0.01) vs sunflower oil	-29.3% ( $P$ $\leq$ 0.001)  -12.0 % ( $P$ $\leq$ 0.01)	NSD  +2.3% NSD	Not reported

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Laine et al., 1982	Ø	24 healthy subj (11 females, 13 males)  20-d RCT, CO	Corn oil: 46.0 g (1900 kcals) to 77.5 g (3500 kcals)  Total fat: 35% TE PUFAs: 52.99 g/3000 kcal	-13.2% ave % change vs palm oil  $-26.3 \pm 3.40$ mg/dl ( $P<0.001$ ) Groups 1 & 3 mean change vs palm oil  $-25.9 \% \pm 2.96$ mg/dl ( $P<0.001$ ) Corn oil (groups 2 & 4) vs palm oil	-22.8%  $-27.7 \pm 4.64$ mg/dl ( $P<0.001$ )  $-23.8 \pm 3.79$ mg/dl ( $P<0.001$ )	NSD  NSD  NSD	Not reported
Childs et al., 1981	Ø	STUDY 1: 12 healthy subj (7 females, 5 males)  STUDY 2: 6 hypercholesterolemic subj (5 females, 1 male)  12-wk RCT, Parallel: four 21-d periods	Corn oil: 30.5 g (P/S ratio: 4.23)  Supplements of oils consumed as meds; half before morning meal and half before evening meal	Normolipidemic $-8.4 \pm 1.2 \%$ ( $P<0.002$ )  Hypercholesterolemic: $-6.2 \pm 1.5 \%$ ( $P<0.01$ ) % change vs baseline	Normolipidemic $-12.3 \pm 2.3 \%$ ( $P<0.002$ )  Hypercholesterolemic: $-9.8 \pm 1.5 \%$ ( $P<0.002$ )	Normolipidemic $-1.5 \pm 2.9 \%$ (NSD)  Hypercholesterolemic: $-1.7 \pm 6.1 \%$ (NSD)	Normolipidemic $-7.8 \pm 2.0 \%$ ( $P<0.01$ )  Hypercholesterolemic: $-9.5 \pm 2.1 \%$ ( $P<0.01$ )

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<b>Dayton et al., 1969</b>	+	846 middle-aged and elderly men (422 CNTL, 424 TX)  8-y RCT	TX : Veg oil diet – substitution of veg oil for ~ 2/3 animal fat using natural foods (P/S ratio 1.7)  Veg oils used: corn, soybean, safflower and cottonseed (in order of decr quantity)  Total fat: % TE TX: 38.9 PUFAs: (linoleic acid % TE): TX: 15.23	-12.7% sustained diff vs CNTL groups	Not reported	Not reported	Not reported
<b>SUBJECTS WITH HIGH BLOOD CHOLESTEROL OR EXISTING CHD</b>							
<b>Grundt et al., 2004</b>	Ø	273 MI pts in TX phase; 89 pts in follow-up phase  12- to 24-mo RCT, DB	Corn oil: 4 g corn oil/d (4 capsules/d each 1 g corn oil)  Total fat (% TE): not reported	Approx -15 % ( $P<0.001$ ) vs baseline  NSD vs n-3 PUFAs	Not reported  Not reported	Approx +11 % ( $P<0.05$ )  NSD	
<b>Sirtori et al., 1992</b>	+	12 Type II hypercholesterolemic pts  6-wk RCT, CO	Corn oil: Total fat (% TE) Corn oil: 27-30 PUFA: 10-11% TE	-2% (NSD)	% not provided (NSD)	% not provided (NSD)	Not reported

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Sirtori et al., 1986	+	26 subj with high atherosclerotic risk (23 completed: 11 females, 12 males)  8-wk RCT, CO	Corn oil Total fat: 30% TE PUFAs: 10% TE	- 7.7 % (P<0.01) vs baseline (Olive-corn)  -6.8 (P<0.05) vs baseline (Corn-olive)	- 9.2 % (P<0.05)	NSD	LDL/HDL 4.35 <i>P value not reported</i>  4.19 <i>P value not reported</i>
Rose et al., 1965	Ø	80 IHD pts  2-yr RCT, DB	Corn oil: 80 g/d supplement (taken in 3 equal doses at mealtime)	-25.0 ± 8.8 mg/100 ml (P<0.01) mean change vs baseline at 6 mo  -30.3 ± 9.9 mg/100 ml mean change vs baseline at 18-24 mo (P<0.01)	Not reported	Not reported	Not reported

\* Values are for corn oil. Numbers may be final values, % change or mean change

\*\*NSD No significant difference

APPENDIXD3TablePostInterventionLipids